

Evaluation of Knowledge and Compliance of Nurses on The Use Personal Protective Equipment (PPE) in Intensive Care Unit (ICU) RSUD Panembahan Senopati Bantul Yogyakarta

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INDEXING

Keywords:

Evaluation;
Knowledge;
Compliance;
Nurses;
Personal Protective-
Equipment (PPE)

ABSTRACT

The purpose of this study is to evaluate the knowledge and compliance of nurses on the use of Personal Protective Equipment (PPE). This research use mix method research with descriptive survey approach and cross sectional design. Quantitative data were obtained from distributing questionnaires with total sampling techniques. Qualitative data obtained from observation and interview. The results of this study found that as many as 12 people nurses (60%) have high knowledge and 8 people nurses (40%) have low knowledge. Besides that, it was found that 16 nurses (80%) were obeyed with the use of Personal Protective Equipment (APD) and 4 nurses (20%) were disobey in the use of Personal Protective Equipment (PPE). The conclusion of this research is nurses at Intensive Care Unit (ICU) of RSUD Panembahan Senopati Bantul have high level of knowledge about Personal Protective Equipment (PPE) and they are obey on the use of Personal Protective Equipment (PPE).

Kata Kunci:

Evaluasi;
Pengetahuan;
Kepatuhan;
Perawat;
Alat Pelindung Diri
(APD)

Tujuan penelitian ini adalah mengevaluasi pengetahuan dan kepatuhan perawat terhadap penggunaan Alat Pelindung Diri (APD). Penelitian ini menggunakan metode penelitian mix method dengan pendekatan survey deskriptif dan rancangan cross sectional. Data kuantitatif didapatkan dari membagikan kuesioner dengan teknik total sampling. Data kualitatif diperoleh dari observasi dan wawancara. Hasil penelitian ini diperoleh bahwa sebanyak 12 orang perawat (60%) mempunyai pengetahuan tinggi dan 8 orang perawat (40%) mempunyai pengetahuan rendah. Selain itu didapatkan bahwa sebanyak 16 orang perawat (80%) Patuh terdapat penggunaan Alat Pelindung Diri (APD) dan 4 orang perawat (20%) Tidak Patuh dalam penggunaan Alat Pelindung Diri (APD). Kesimpulan penelitian ini adalah tenaga perawat di Intensive Care Unit (ICU) RSUD Panembahan Senopati Bantul mempunyai tingkat pengetahuan mengenai Alat Pelindung Diri (APD) yang tinggi dan patuh terdapat penggunaan Alat Pelindung Diri (APD).

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Article history: Received 5 Feb 2017; Revised 15 Sept 2017; Accepted 25 Okt 2017

INTRODUCTION

Personal Protective Equipment (PPE) is a special clothing or equipment used for the protection of infectious substances. Personal Protective Equipment is very important for nurses. The work done by the nurse has high potential in the spread of infection, such as cleaning of body fluids, injection / blood collection, catheter installation, wound care, and others. If the work is not equipped with Personal Protective Equipment (PPE) in accordance with established procedures, will potentially transmit infectious diseases for both patients and health workers.¹

The use of PPE is one of the Infection Control and Prevention programs included in isolation precautions compiled by Centers for Disease Control and Prevention (CDC) and most important infection control measures is hand hygiene.² Isolation precautions is an infection control

precaution prepared by the CDC and should be applied in hospitals and other health services. Isolation precautions are applied to reduce the risk of disease transmission from patient to other patient or to medical worker and evaluate patient.³ Isolation precautions is divided into two pillars: standard precaution and transmission based precautions. Standard precautions of infection control and prevention are applied to all patients who have a principle that the blood and fluid of patients potentially transmit the disease, Transmission precautions are in addition to the standard precautions that performed after the type of infection is known. The purpose of Infection Prevention and Control is to help reduce the spread of infections related to health care, by assessment, planning, implementation, and evaluation.

LITERATURE REVIEW

Evaluation is a planned activity to know the state of an object by using the instrument and the result is compared with the benchmark to obtain a conclusion (Martha, 2009).⁴ The purpose of evaluation is to provide material considerations for determining a particular policy, beginning with a systematic data collection process.

Knowledge is the result of knowing and this occurs after a person performs sensing of a particular object. Factors that affect knowledge include: education, mass media, social, cultural, economic, environmental, experience, and age.⁵ Knowledge stages are six levels: know, comprehension, application, analysis, synthesis, evaluation.

Obedience is a human behavior that is obedient to rules, orders, procedures, and discipline. Compliance behavior is temporary because this behavior persists because of supervision. Obedience is a human behavior that is obey to rules, orders, procedures, and discipline. Compliance behavior is temporary because this behavior persists because of supervision. An optimal compliance behavior if the nurse itself considers this behavior is positive.⁶

Factors affecting Compliance consists of intrinsic factors and extrinsic factors. Intrinsic factors include: knowledge, employment, education, and attitude. Extrinsic factors include the completeness of PPE, the comfort of PPE, the regulation of PPE, monitoring the use of PPE.⁶ Factors affecting Compliance consists of intrinsic factors and extrinsic factors. Intrinsic factors include: knowledge, employment, education, and attitude. Extrinsic factors include the completeness of PPE, the comfort of PPE, the regulation of PPE, monitoring the use of PPE.

HAIs (Healthcare-Associated Infections) is a term used for hospital-acquired infections and other health facilities, infections that occur as a result of health interventions.⁷ HAIs are also called nosocomial infections. Precautions and controls HAIs (Healthcare-Associated Infections) need to break one of the chain of transmission including infectious agents, reservoirs, portals of exit, transmission, portal of entry.

The Occupational Safety and Health Administration (OSHA) defines Personal Protective Equipment (PPE) as special clothing or equipment used by employees for the protection of contaminated substances (Prevention Control and Prevention). Types of PPE in the hospital include gloves, masks, google or glasses, gowns or protective gowns, headgear or hats, leg protectors.

The nurse is one of the health workers in the hospital who can have the risk of accidents and occupational diseases. The nurse have daily contacts the patient for a long time of six to eight hours per day, thus exposing the pathogenic microorganisms. Nurses can carry infections from one patient to another.

ICU nurses are different from other parts nurses. The level of work and knowledge of ICU nurses is more complex than that of other hospital nurses, as it is responsible for maintaining patient homeostasis to struggle through near death conditions.⁸ The characteristics of ICU nurses, ie, have a better level of knowledge and skills than other nurses in dealing with critically ill patients. The ICU nurse has at least a BTCLS certificate. ICU services are services provided to patients who are in severe pain and need special care, and require close and ongoing monitoring and immediate action.

RESEARCH METHOD

This research type is a descriptive survey research using qualitative and quantitative approach, with cross sectional design. Quantitative data was obtained by distributing questionnaires to a number of respondents and qualitative data was taken by observation and interview.⁹

The subject of this research is 20 nurse in Intensive Care Unit (ICU) RSUD Panembahan Senopati Bantul Yogyakarta. Quantitative approach of this research is the distribution of questionnaires using total sampling technique. Qualitative approach in the form of observation is done by total sampling technique and interview is done by purposive sampling technique to get key information.

Quantitative data was obtained by research instrument in the form of questionnaire. Qualitative data were obtained with several research instruments: observation list of compliance of PPE usage, observation sheet of PPE completeness, observation sheet of PPE regulation, check list about socialization or training of Personal Protective Equipment (PPE), and interview guide.

Data analysis is done by coding each question to facilitate the entry of data into the result table, grouping the questions based on the variables studied, entering the questionnaire data, observation, and interviewing into the results table, processing the data into the form of frequency, percentage, median, and standard deviation and displays the results in the form of tables, diagrams, and drawings, and the last is to make the discussion and conclusion of the data obtained.

RESULT AND DISCUSSION

Result

Table 1. Characteristics of Respondents

Category	Frequency	Percentage
Age		
20 – 30 y.o	5	25 %
31 – 40 y.o	8	40%
41 – 50 y.o	5	25%
51 – 60 y.o	2	10%
Total	20	100%
Gender		
Male	5	25%
Female	15	75%
Total	20	100%
Level of Education		
D3	15	75%
D4	1	5%
S1	4	20%
Total	20	100%
Length of Work		
1 – 5 years	4	20%
6 – 10 years	6	30%
11 – 15 years	4	20%
16 – 20 years	2	10%
21 – 25 years	3	15%
26 – 30 years	1	5%
Total	20	100%
Information resource		
Hospital	11	55%
Hospital, internet	3	15%
Hospital, internet, television, etc	6	30%
Total	20	100%

Based on the above table, it can be seen that the nurse in Intensive Care Unit (ICU) of Panembahan Senapati Bantul General Hospital is mostly 31-40 years old (40%), mostly female (75%), education level mostly D3 (75%) , Working days are mostly 6-10 years (30%), and information sources on PPE are mostly obtained from hospitals (55%).

The knowledge level of the nurse was assessed with a score of T. The result obtained standard deviation value = 1.05; mean = 13.45; And median = 50. Furthermore, to categorize the data, the data is processed in the form of a T score. If the value is greater than or equal to the mean score of T (≥ 50) it is categorized high knowledge and if smaller than T score (<50) is categorized low knowledge

Table 2. The distribution about Frequency and Percentage of Nurse Knowledge on Use of Personal Protective Equipment (PPE)

No	Category	Frequency	Percentage
1.	Low	8	40 %
2.	High	12	60 %
	Total	20	100%

The nurse's compliance level was assessed with a T score. The results obtained standard deviation values = 0.9; Mean = 3,6; And median = 54, 25. If the value is greater

than or equal to the mean score T (≥ 54.25) then it is categorized as obey, and if it is smaller than T score (<54.25) it is categorized as disobey.

Table 3. The distributions about Frequency and Percentage of Compliance of Personal Protective Equipment (APD) Nurses Intensive Care Unit (ICU) Panembahan Senopati Bantul Hospital Yogyakarta

No	Category	Frequency	Percentage
1	Obey	16	80%
2	Disobey	4	20%
	Total	20	100%

The following is presented on the availability of Personal Protective Equipment in ICU RSUD Panembahan Senopati Bantul. Based on the following table, it can be seen that goggles and hats are not available in the Intensive Care Unit (ICU) of Panembahan Senopati Bantul Hospital

Table 4. Availability of Personal Protective Equipment (PPE) at Intensive Care Unit (ICU) Panembahan Senopati Bantul Hospital Yogyakarta

No	Kind of PPE	Availability		Information
		Yes	No	
1.	Mask	√		The use of masks is limited due to the financial efficiency of the hospital
2.	Gloves	√		The use of gloves is limited due to the financial efficiency of the hospital
3.	Hat		√	Not available
4.	Gown / apron	√		Available apron for both nurses and visitors amounted to 20 pieces.
5.	Footwear	√		Available footwear for both nurses and visitors amounted to 10 pieces.
6.	Goggles		√	Not available

The following table provides the availability of regulations on Personal Protective Equipment in ICU Panembahan Senopati Bantul General Hospital. Based on the following table, guidelines on the use of PPE and

guidelines and SOPs are not available in the Intensive Care Unit (ICU) of Panembahan Senopati Bantul General Hospital.

Table 5. Availability of Regulation on Personal Protective Equipment (PPE) in Intensive Care Unit (ICU) Panembahan Senopati Bantul Hospital Yogyakarta.

Kind of Regulation	Availability		Information
	Yes	No	
PPI policy	√		
Guideline for the use of PPE		√	
Guide and SOP		√	

The following table presents the history of attending a seminar or training on PPE. Based on the following table, the nurse who has a history of attending the seminar /

training APD of 45%, and nurses who do not have a history of attending seminars as many as 55%

Table 6. The History of Attending a Seminar or Training on PPE

the History of Attending a Seminar or Training on PPE	Frequency	Information
No	11	55%
Yes	9	45%
Total	20	100%

The following results are presented the interviews with informants. The main topic of the interview with the informants is about obstacles and constraints on the use of

PPE, the socialization of PPE, the supervision of PPE, the regulations on PPE, and the recommendations of PPE.

Table 7. Interview with Informant

Category	Interview result	
	1 st Informant	2 nd Informant
Obstacles and constraints on the use of PPE,	<ul style="list-style-type: none"> • IPCLN evaluation is still lack • PPE socialization is still lack of priority because the socialization of hand hygiene is prioritized 	<ul style="list-style-type: none"> • There are no significant obstacles because the tools are fully available
the socialization of PPE	<ul style="list-style-type: none"> • PPI training is one of five compulsory training in the hospital, including effective communication and patient safety 	<ul style="list-style-type: none"> • The nursing team is almost 50% following the PPE socialization
the supervision of PPE	<ul style="list-style-type: none"> • There is a separate committee of PPI committees supported by IPCLN 	<ul style="list-style-type: none"> • At first there was an observer from IPCLN, but now no longer exists
the regulations on PPE	<ul style="list-style-type: none"> • There is a PPI guide in each hospital unit 	<ul style="list-style-type: none"> • Regulation is complete
the recommendations of PPE	<ul style="list-style-type: none"> • There should be control and evaluation of the use of PPE each month 	<ul style="list-style-type: none"> • There is no. All the tools are sufficient and the team of nurses remind each other in the use of PPE

Discussion

Nursing Knowledge Level on Use of Personal Protective Equipment (PPE)

Based on the results of the study, as many as 12 nurses (60%) had a high level of knowledge about PPE and 8 nurses (40%) had low knowledge about PPE. This shows that the total knowledge of the respondents including knowledge is high. Knowledge is a process of not knowing to be know. This occurs after a person performs sensing through sight, hearing, smell, taste, and touching over a particular object. Another opinion also reveals that knowledge is information that has been combined with the understanding and potential for action, which is then

embedded in the minds of a person. Much of a person's knowledge is gained through education, the experiences of others, the media, and the environment.¹⁰

Nurses Compliance Level on Use of Personal Protective Equipment (PPE)

Based on the results of the study, 16 nurses (80%) adhered to the use of Personal Protective Equipment (APD) and 4 nurses (20%) did not adhere to the use of Personal Protective Equipment (PPE). This shows that the Intensive Care Unit (ICU) nurses adhere to the use of PPE. Knowledge is a very important factor for the formation of a person's behavior, if a person has a lack of knowledge about

the potential or source of hazards that exist in the work environment, then the individual will tend to make a wrong decision, in this case the compliance behavior of use of PPE. The results of this study indicate that knowledge is one of the predisposing factors that encourage or inhibit individuals to behave obediently (in terms of use of PPE).

CONCLUSION

The total of 12 nurses (60%) have a high level of knowledge on the PPE and 8 nurses (40%) have low knowledge level on PPE. The total of 16 nurses (80%) Obey the use of Personal Protective Equipment (APD) and 4 nurses (20%) Uncompromising in the use of Personal Protective Equipment (PPE). The majority of Intensive Care Unit (ICU) of Panembahan Senopati Bantul Hospital 55% have not attended training and seminar on Personal Protective Equipment (PPE). Completeness of Personal Protective Equipment (PPE) in the form of hat and goggles still not available. There are no guidelines for the use of PPE and guidelines and SOPs.

Based on the conclusions of the study, suggestions may be given as follows: Involve nurses in training programs or seminars on PPE regularly to remind and refresh nurse knowledge about the importance of using Personal Protective Equipment (PPE), Complete personal protective equipment according to MOH standards gradually, both PPE is often used or rarely used. So when there are medical actions that require PPE, nurses do not have to bother looking everywhere, for example goggles and hats, Complete the rules on PPE such as Guidelines on the Use of PPE and Guidelines and SOPs, There needs to be regular and continuous evaluation of the use of Personal Protective Equipment (PPE).

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